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# LifeWatch ERIC Metadata Catalogue



GeoNetwork Meeting, June 23rd 2020

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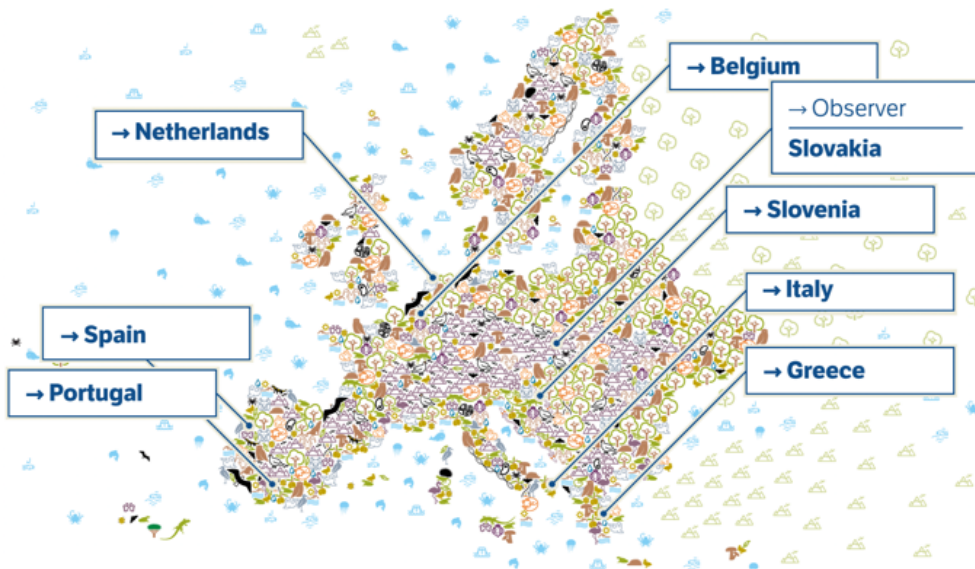
*LifeWatch ERIC Service Centre*

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# LifeWatch ERIC

**LifeWatch ERIC** is a European Infrastructure Consortium that offers e-Science research facilities to scientists investigating Biodiversity organization and Ecosystem functions and services.

Combining a wide range of ICT tools and resources with deep domain knowledge, **LifeWatch ERIC**'s mission is to be the leading worldwide provider of content and services for the Biodiversity research community, creating new opportunities for large-scale scientific development, and enabling accelerated data capture and modelling thanks to the use of innovative technologies.



**LifeWatch ERIC** is a distributed research e-infrastructure consortium consisting of 7 European Member States.

Its structure mirrors its nature, with central components (Common Facilities) located in 3 Member States (Spain, Italy and the Netherlands), and National Nodes in all 7 countries.

LifeWatch ERIC's current members are: Belgium, Greece, Italy, the Netherlands, Portugal, Slovenia and Spain. Slovakia participates as an Observer.

# LifeWatch ERIC

With LifeWatch ERIC users can:

- find, access, work with and reuse **FAIR data** collected by science at a global level, of different typologies and scales. Advanced search functions, thesauri and ontologies are available on our catalogue to further combine data and generate new services;
- process and analyse the data in our **Virtual Research Environments** (VREs). Creating multi-spatial and biological system models, and elaborating trends and predictions are just some of the many possibilities offered by VREs, online laboratories equipped with tools for data analysis, innovative technologies, like blockchain, storage capacity and enormous computational power;
- **get trained** in the use of our services, as well as on key scientific issues through Master's and PhD courses, summer schools, webinar programmes and educational initiatives;
- receive **support** through our Helpdesk and its experts specialised in different domains.



# LifeWatch ERIC Metadata Catalogue

The LifeWatch ERIC metadata catalogue is based on GeoNetwork and allows to manage (simple and complex) metadata related to four kinds of resources:

- **Virtual Research Environments**, by using a customized ISO19139 standard (25 metadata attributes)
- **Services**, by using a customized ISO19139 standard (40 metadata attributes)
- **Workflows**, by using a customized ISO19139 standard (25 metadata attributes)
- **Datasets**, by using a customized ISO19139 standard (76 metadata attributes) → EML 2.2

Metadata attributes can be optional/mandatory and can require single/multiple values (metadata cardinality)

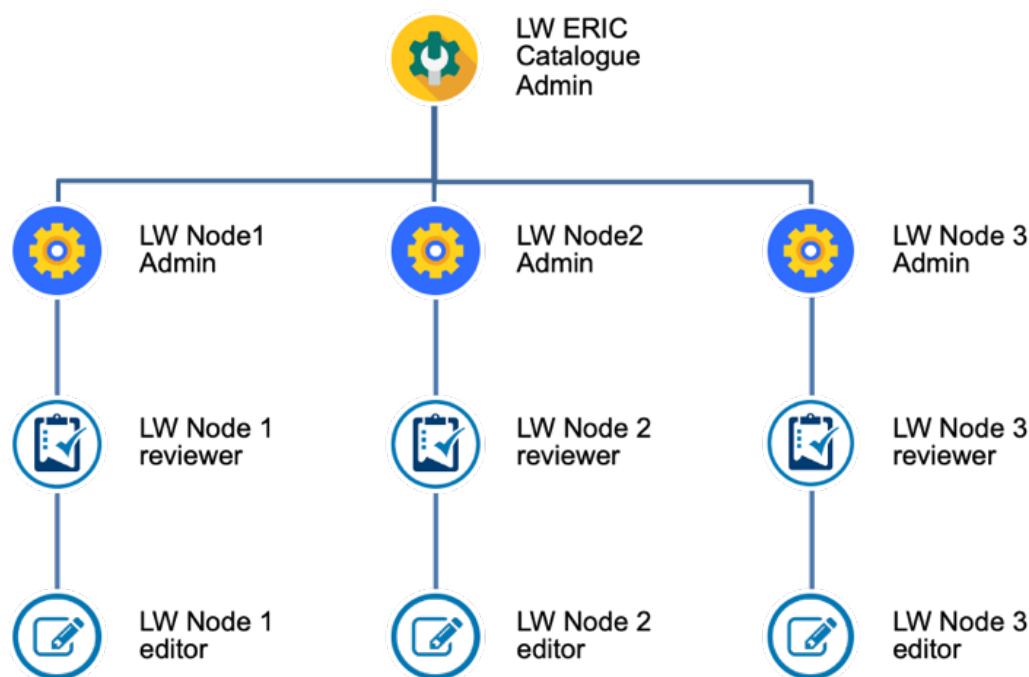
The LifeWatch ERIC metadata catalogue allows (upon validation and verification) the creation of Digital Object Identifiers (DOIs) for resources that do not have it.

Only admin users can request a DOI by exploiting the GeoNetwork – DataCite connection.

# LifeWatch ERIC Metadata Catalogue

The metadata catalogue allows to:

- search resources with advanced filters (e.g., according to the provider, i.e. LifeWatch national nodes)
- manage users with the corresponding profiles and privileges:



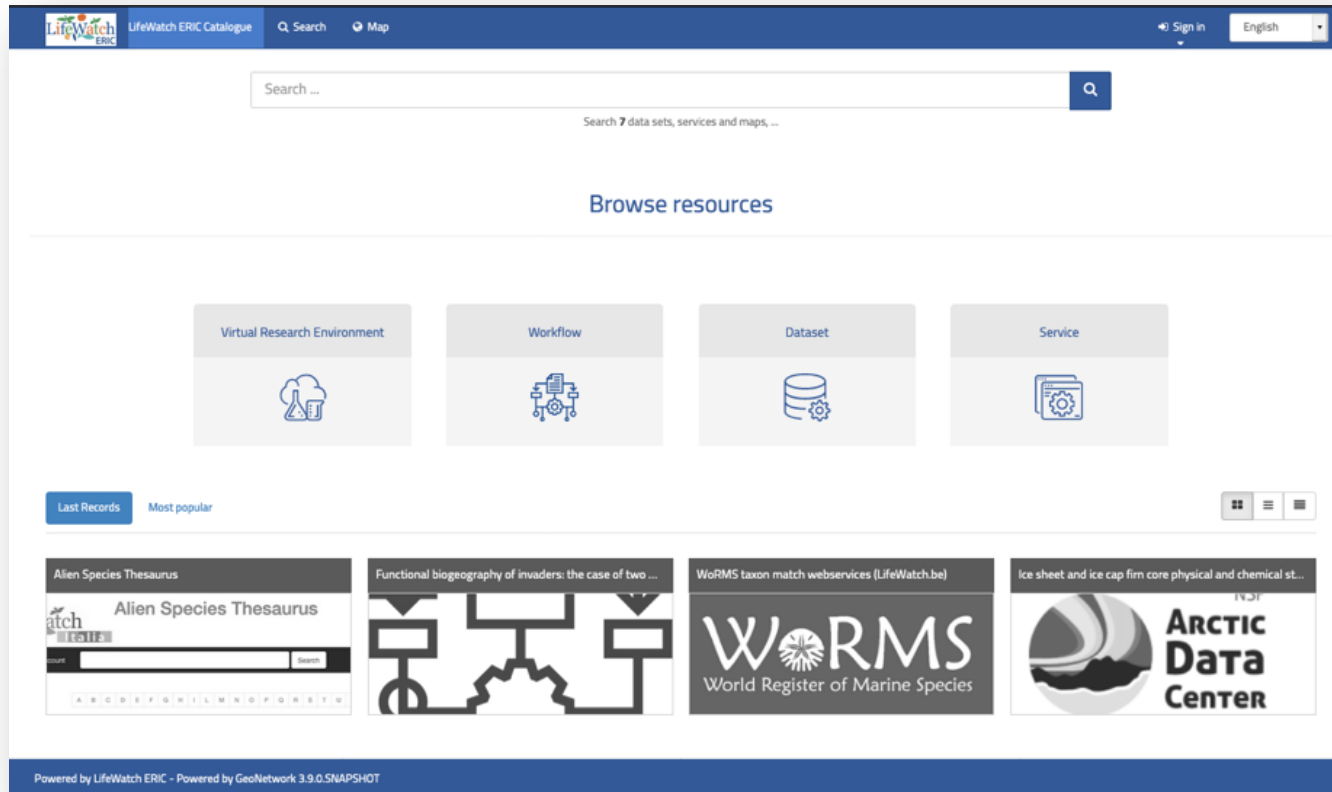
**User admin:**  
has all privileges within its group

**Content reviewer:**  
can review content and authorize publication within its group

**Editor:**  
can create/edit/delete content within its group

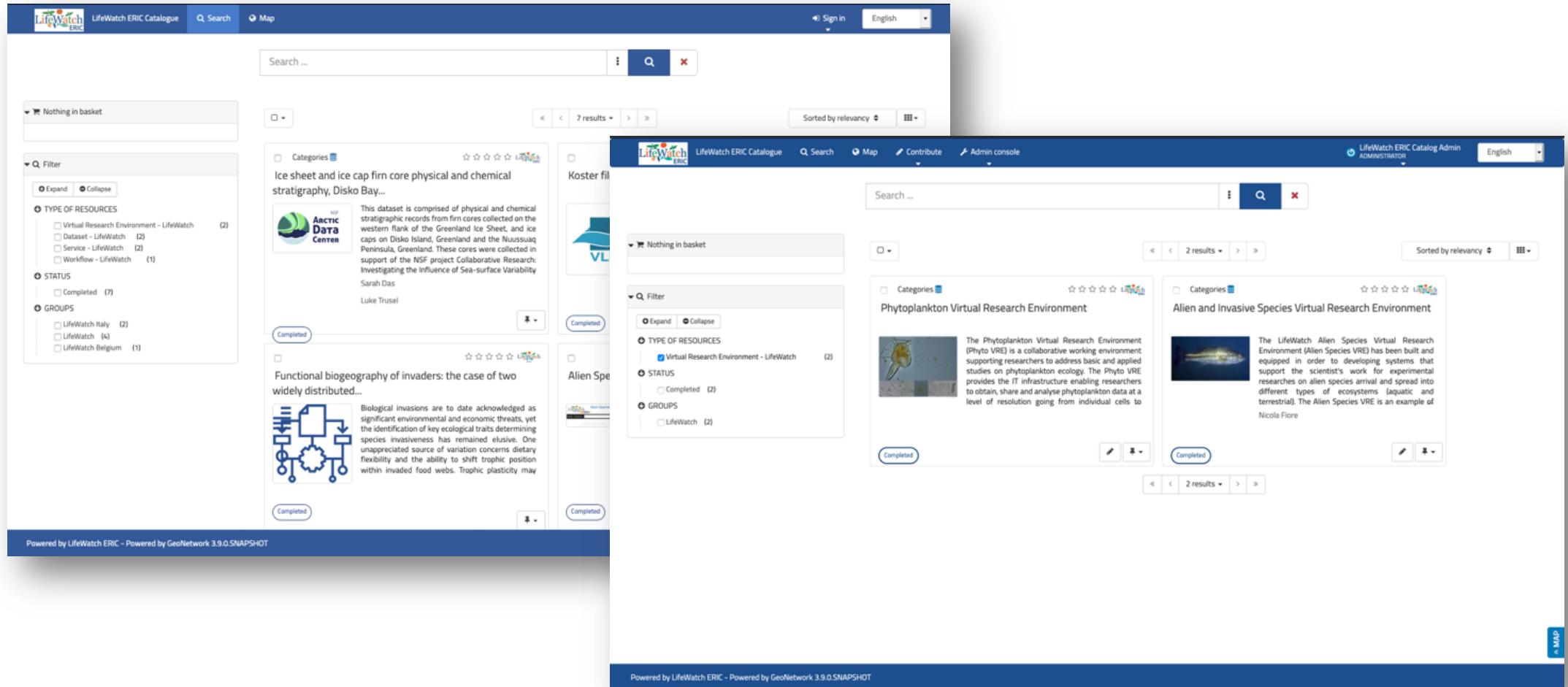
**Registered users:** can download protected data

# LifeWatch ERIC Metadata Catalogue



The screenshot displays the LifeWatch ERIC Metadata Catalogue web application. The interface features a dark blue header with the LifeWatch ERIC logo, the title 'LifeWatch ERIC Catalogue', and navigation links for 'Search' and 'Map'. On the right side of the header, there are links for 'Sign in' and a language dropdown menu set to 'English'. Below the header is a large search bar with the placeholder text 'Search ...' and a magnifying glass icon. A small text hint below the search bar reads 'Search 7 data sets, services and maps, ...'. The main content area is titled 'Browse resources' and contains four large, light gray rectangular buttons with icons: 'Virtual Research Environment' (cloud and flask icon), 'Workflow' (gears and document icon), 'Dataset' (database cylinder icon), and 'Service' (gear and document icon). Below these buttons, there are two tabs: 'Last Records' (active) and 'Most popular'. The 'Last Records' tab displays a grid of four resource thumbnails. The first thumbnail is for 'Alien Species Thesaurus' and shows a search interface. The second thumbnail is for 'Functional biogeography of invaders: the case of two ...' and shows a network diagram. The third thumbnail is for 'WoRMS taxon match webservice (LifeWatch.be)' and features the 'WoRMS World Register of Marine Species' logo. The fourth thumbnail is for 'Ice sheet and ice cap firn core physical and chemical st...' and features the 'ARCTIC Data Center' logo. At the bottom of the page, a footer bar contains the text 'Powered by LifeWatch ERIC - Powered by GeoNetwork 3.9.0.SNAPSHOT'.

# LifeWatch ERIC Metadata Catalogue



The image displays two overlapping screenshots of the LifeWatch ERIC Metadata Catalogue interface. The top screenshot shows a search results page with 7 results, featuring a filter sidebar on the left and a list of metadata entries. The bottom screenshot shows a search results page with 2 results, featuring a filter sidebar on the left and a list of metadata entries. Both screenshots show the LifeWatch ERIC logo, search bar, and navigation links.

**Top Screenshot Details:**

- Header:** LifeWatch ERIC Catalogue, Search, Map, Sign in, English.
- Search Bar:** Search ...
- Filter Sidebar:**
  - Nothing in basket**
  - Filter**
    - Expand** **Collapse**
    - TYPE OF RESOURCES**
      - ☐ Virtual Research Environment - LifeWatch (2)
      - ☐ Dataset - LifeWatch (2)
      - ☐ Service - LifeWatch (2)
      - ☐ Workflow - LifeWatch (1)
    - STATUS**
      - ☐ Completed (7)
    - GROUPS**
      - ☐ LifeWatch Italy (2)
      - ☐ LifeWatch (4)
      - ☐ LifeWatch Belgium (1)
- Results:**
  - Ice sheet and ice cap firn core physical and chemical stratigraphy, Disko Bay...**
    - Categories:** ☆☆☆☆☆
    - Icon:** Arctic Data Center
    - Description:** This dataset is comprised of physical and chemical stratigraphic records from firn cores collected on the western flank of the Greenland Ice Sheet, and ice caps on Disko Island, Greenland and the Nuussuaq Peninsula, Greenland. These cores were collected in support of the NSF project Collaborative Research: Investigating the Influence of Sea-surface Variability Sarah Das Luke Trusel
    - Status:** Completed
  - Functional biogeography of invaders: the case of two widely distributed...**
    - Icon:** Biological invasions
    - Description:** Biological invasions are to date acknowledged as significant environmental and economic threats, yet the identification of key ecological traits determining species invasiveness has remained elusive. One unappreciated source of variation concerns dietary flexibility and the ability to shift trophic position within invaded food webs. Trophic plasticity may
    - Status:** Completed

**Bottom Screenshot Details:**

- Header:** LifeWatch ERIC Catalogue, Search, Map, Contribute, Admin console, LifeWatch ERIC Catalog Admin, ADMINISTRATOR, English.
- Search Bar:** Search ...
- Filter Sidebar:**
  - Nothing in basket**
  - Filter**
    - Expand** **Collapse**
    - TYPE OF RESOURCES**
      - ☒ Virtual Research Environment - LifeWatch (2)
    - STATUS**
      - ☐ Completed (2)
    - GROUPS**
      - ☐ LifeWatch (2)
- Results:**
  - Phytoplankton Virtual Research Environment**
    - Icon:** Phytoplankton
    - Description:** The Phytoplankton Virtual Research Environment (Phyto VRE) is a collaborative working environment supporting researchers to address basic and applied studies on phytoplankton ecology. The Phyto VRE provides the IT infrastructure enabling researchers to obtain, share and analyse phytoplankton data at a level of resolution going from individual cells to
    - Status:** Completed
  - Alien and Invasive Species Virtual Research Environment**
    - Icon:** Alien Species
    - Description:** The LifeWatch Alien Species Virtual Research Environment (Alien Species VRE) has been built and equipped in order to developing systems that support the scientist's work for experimental researches on alien species arrival and spread into different types of ecosystems (aquatic and terrestrial). The Alien Species VRE is an example of Nicola Fiore
    - Status:** Completed


Powered by LifeWatch ERIC - Powered by GeoNetwork 3.9.0.SNAPSHOT

# LifeWatch ERIC Metadata Catalogue

Q Back to home < Previous Next > Download

## Alien and Invasive Species Virtual Research Environment

The LifeWatch Alien Species Virtual Research Environment (Alien Species VRE) has been built and equipped in order to develop systems that support the scientist's work for experimental researches on alien species arrival and spread into different types of ecosystems (aquatic and terrestrial). The Alien Species VRE is an example of the types of scientific studies that researchers on biodiversity and alien species could undertake. The goal is to obtain a list of capabilities on the topic to be shared through the LifeWatch portal with all those interested in alien and invasive species.



M	VRE02
URL	<a href="http://www.servicecentre.lifewatch.eu/web/alien-and-invasive-species/home">http://www.servicecentre.lifewatch.eu/web/alien-and-invasive-species/home</a>
Coordination Team	
Contact Point (Name)	Nicola Fiore
Address	LifeWatch ERIC Service Centre
E-Mail	<a href="mailto:nicola.fiore@lifewatch.eu">nicola.fiore@lifewatch.eu</a>

Provided by: LifeWatch ERIC  
Updated: 4 days ago  
Share on social sites: Twitter, Facebook, LinkedIn, Email, Print  
Completed

### VRE Contractual Information

License	All rights reserved Copyright LifeWatch ERIC - © 2018
Usage Conditions	Permitted: - view, download, copy, print and save search results - view, download, copy, print and save individual articles Not permitted: - use e-resources for commercial gain - transmit / disseminate online content to unauthorized users
Publications about this VRE	Boggers, A., Pierri, C., Alber, R. et al. (2016) A geographic distribution data set of biodiversity in Italian freshwater. <i>Biogeographia - The Journal of Integrative Biogeography</i> 31: 55-72. DOI:10.21426/B631132737. Carriani, G., Pierri, C., Accoroni, S. et al. (2016) Ecosystem vulnerability to alien and invasive species: A case study on marine habitats along the Italian coast. <i>Aquatic Conservation: Marine and Freshwater Ecosystems</i> , 26, 392-409. DOI: 10.1002/aqc.2550. Boggers, A., Basset, A., Autroni, M. et al. (2014) Weak effects of habitat type on susceptibility to invasive freshwater species: an Italian case study. <i>Aquatic Conservation: Marine and Freshwater Ecosystems</i> , 24, 841-852. DOI: 10.1002/aqc.2450.

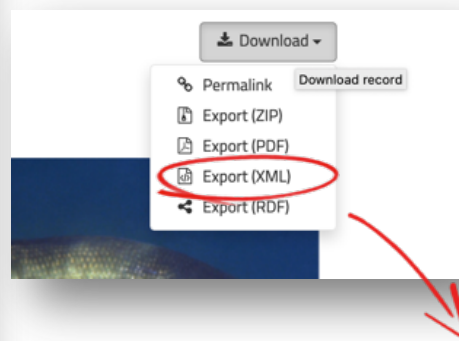
### VRE Support Information

VRE Helpdesk	<a href="https://www.lifewatch.eu/web/guest/help-desk">https://www.lifewatch.eu/web/guest/help-desk</a>
VRE Training	<a href="http://training.servicecentre.lifewatch.eu/course/view.php?id=9">http://training.servicecentre.lifewatch.eu/course/view.php?id=9</a>

### Management Info

Author	Nicola Fiore, <a href="mailto:nicola.fiore@lifewatch.eu">nicola.fiore@lifewatch.eu</a>
Maintainer	Baria Rosati, <a href="mailto:baria.rosati@cnr.it">baria.rosati@cnr.it</a>
Version	1.0
Last Updated	2018-12-14

Public users can browse the catalogue and view/download the resources metadata



```
<gmd:MD_Metadata xmlns:schema="http://www.isotc211.org/2005/gmd" http://schemas.opengis.net/csw/2.0.2/profiles/xpiso/1.0/xpiso.xsd">
  <gmd:fileIdentifier>
    <gco:CharacterString>07e65d2-d5e5-4d65-964b-e7d5d82a2f2f</gco:CharacterString>
  </gmd:fileIdentifier>
  <gmd:language>
    <gmd:LanguageCode codeList="http://www.loc.gov/standards/iso639-2/" codeListValue="eng"/>
  </gmd:language>
  <gmd:hierarchyLevel>
    <gmd:MD_ScopeCode codeList="http://standards.iso.org/iso/19139/resources/gmxCodeLists.xml#MD_ScopeCode" codeListValue="vri"/>
  </gmd:hierarchyLevel>
  <gmd:identificationInfo>
    <gmd:MD_DataIdentification>
      <gmd:citation>
        <gmd:Citation>
          <gmd:title>
            <gco:CharacterString>
              Alien and Invasive Species Virtual Research Environment
            </gco:CharacterString>
          </gmd:title>
          <gmd:alternateTitle gmd:reason="missing"/>
          </gmd:alternateTitle>
          <gmd:citation>
            <gmd:abstract>
              <gco:CharacterString>
                The Alien and Invasive Species Virtual Research Environment (hereafter AS VRE), a collaborative working environment supporting researchers to address basic and applied studies on ecosystem vulnerability to alien species arrival. The AS VRE provides the IT infrastructure enabling researchers to obtain, share and analyse biological data including the alien and invasive species traits at species level of resolution. The AS VRE allows to:
                • Obtain and share harmonised data on the national distribution of species of fauna and flora belonging to different habitats (marine, fresh and transitional waters, and terrestrial).
                • Discover, access, integrate and export both own and others' datasets (including additional metadata) held by the LifeWatch Data Portal or by the distributed data centres.
                • Share and create workflows through orchestrators such as Taverna Workbench (www.taverna.org.uk) using algorithms and web services.
                • Work together in a real-time environment fostering the share of knowledge and overcoming the limitations of traditional working practices, e.g. the transfer of large datasets between users or power demanded by the computational analysis.
              </gco:CharacterString>
            </gmd:abstract>
            <gmd:status>
              <gmd:MD_ProgressCode codeListValue="completed" codeList="http://standards.iso.org/iso/19139/resources/gmxCodeLists.xml#MD_ProgressCode"/>
            </gmd:status>
            <gmd:graphicOverview>
              <gmd:MD_ThumbnailGraphic>
                <gmd:file>
                  <gco:CharacterString>
                    http://193.204.79.113:8080/geonetwork/srv/api/records/07e65d2-d5e5-4d65-964b-e7d5d82a2f2f/attachments/AlienInvasiveSpecies.png
                  </gco:CharacterString>
                </gmd:file>
              </gmd:MD_ThumbnailGraphic>
            </gmd:graphicOverview>
          </gmd:citation>
        </gmd:Citation>
      </gmd:citation>
    </gmd:MD_DataIdentification>
  </gmd:identificationInfo>

```

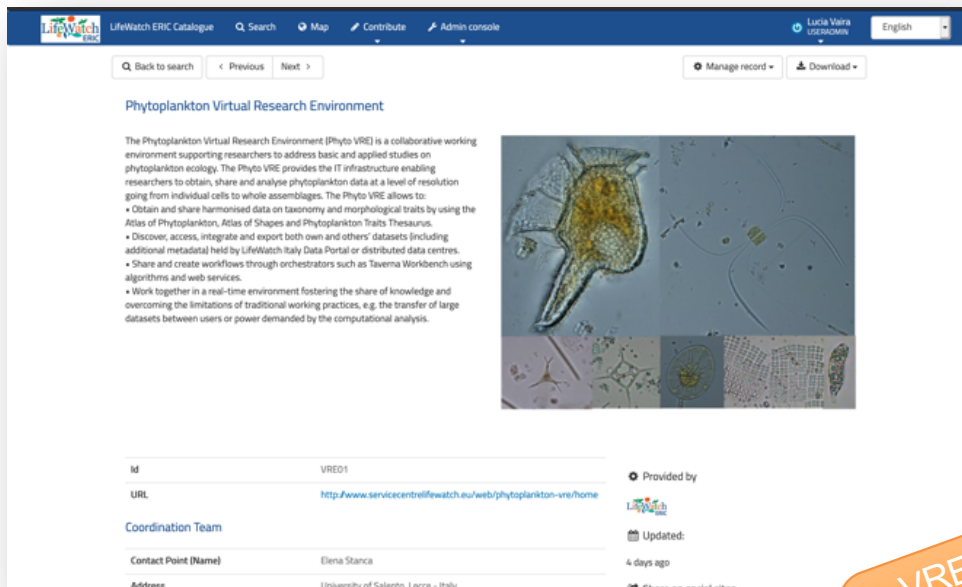
VRE



# LifeWatch ERIC Metadata Catalogue

Registered users can browse the catalogue and:

- view / download metadata of other groups
- manage / edit / delete metadata within their group



**Phytoplankton Virtual Research Environment**

The Phytoplankton Virtual Research Environment (Phyto VRE) is a collaborative working environment supporting researchers to address basic and applied studies on phytoplankton ecology. The Phyto VRE provides the IT infrastructure enabling researchers to obtain, share and analyse phytoplankton data at a level of resolution going from individual cells to whole assemblages. The Phyto VRE allows to:

- Obtain and share harmonised data on taxonomy and morphological traits by using the Atlas of Phytoplankton, Atlas of Shapes and Phytoplankton Traits Thesaurus.
- Discover, access, integrate and export both own and others' datasets (including additional metadata) held by LifeWatch Italy Data Portal or distributed data centres.
- Share and create workflows through orchestrators such as Taverna Workbench using algorithms and web services.
- Work together in a real-time environment fostering the share of knowledge and overcoming the limitations of traditional working practices, e.g. the transfer of large datasets between users or power demanded by the computational analysis.


**Id** VRED1

**URL** <http://www.servicecentrefewatch.eu/web/phytoplankton-vre/home>

**Coordination Team**

**Contact Point (Name)** Elena Stanca

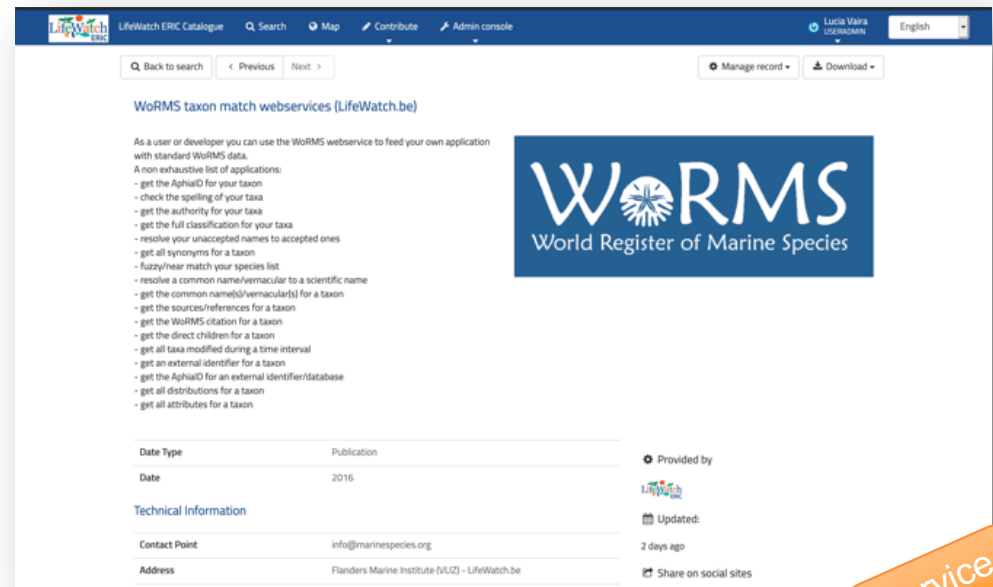
**Address** University of Salento, Lecce - Italy

**Provided by** 

**Updated:** 4 days ago

**Share on social sites**

VRE



**WoRMS taxon match webservice (LifeWatch.be)**

As a user or developer you can use the WoRMS webservice to feed your own application with standard WoRMS data.

A non exhaustive list of applications:

- get the AphiaID for your taxon
- check the spelling of your taxa
- get the authority for your taxa
- get the full classification for your taxa
- resolve your unaccepted names to accepted ones
- get all synonyms for a taxon
- fuzzy/near match your species list
- resolve a common name/vernacular to a scientific name
- get the common name(s)/vernacular(s) for a taxon
- get the sources/references for a taxon
- get the WoRMS citation for a taxon
- get the direct children for a taxon
- get all taxa modified during a time interval
- get an external identifier for a taxon
- get the AphiaID for an external identifier/database
- get all distributions for a taxon
- get all attributes for a taxon

**WoRMS**  
World Register of Marine Species


**Date Type** Publication

**Date** 2016

**Technical Information**

**Contact Point** [info@marinespecies.org](mailto:info@marinespecies.org)

**Address** Flanders Marine Institute (VLIZ) - LifeWatch.be

**Provided by** 

**Updated:** 2 days ago

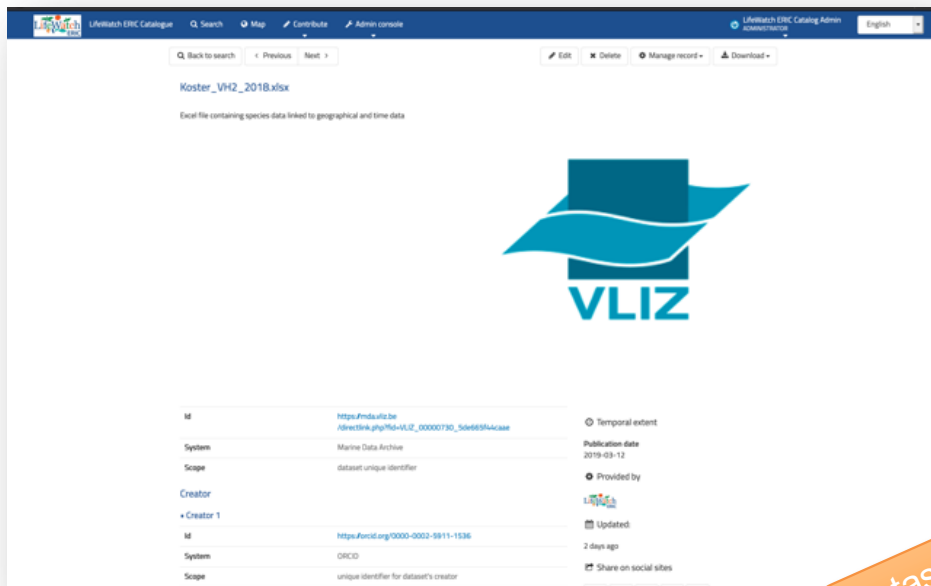
**Share on social sites**

Service

# LifeWatch ERIC Metadata Catalogue

Registered users can browse the catalogue and:

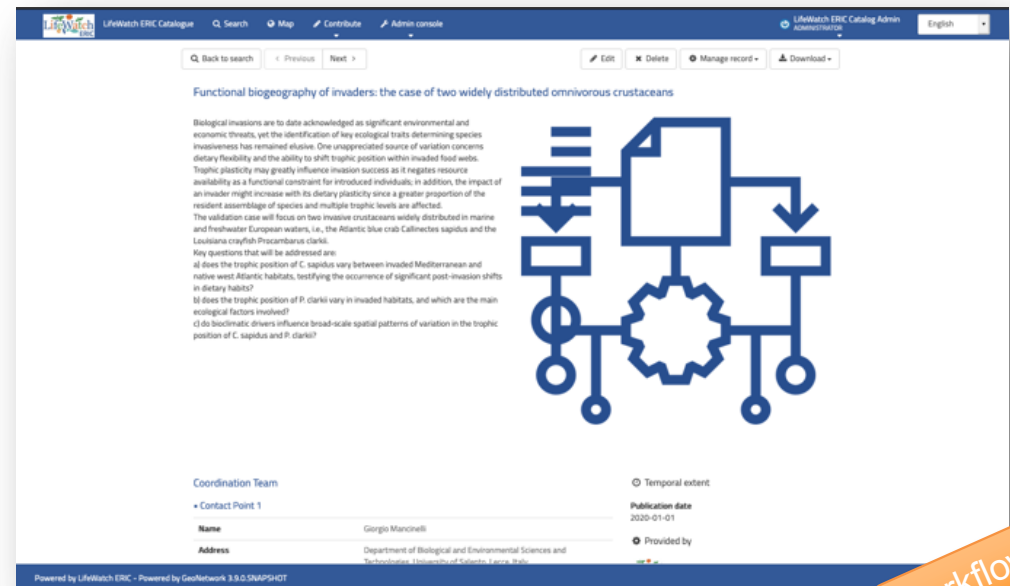
- view / download metadata of other groups
- manage / edit / delete metadata within their group



The screenshot displays a dataset entry for 'Koster\_VH2\_2018.xlsx'. The entry includes a description: 'Excel file containing species data linked to geographical and time data'. It features the VLIZ logo. Below the description, there is a table with metadata fields:

ID	https://mdufa.be/redirect.php?id=VLIZ_00000730_sdb685f4cace	Temporal extent	
System	Marine Data Archive	Publication date	2019-03-12
Scope	dataset unique identifier	Provided by	
Creator		Updated	2 days ago
• Creator 1		Share on social sites	
ID	https://orcid.org/0000-0002-5811-1536		
System	ORCID		
Scope	unique identifier for dataset's creator		

Dataset



The screenshot displays a workflow entry for 'Functional biogeography of invaders: the case of two widely distributed omnivorous crustaceans'. The entry includes a description: 'Biological invasions are to date acknowledged as significant environmental and economic threats, yet the identification of key ecological traits determining species invasiveness has remained elusive. One unappreciated source of variation concerns dietary flexibility and the ability to shift trophic position within invaded food webs. Trophic plasticity may greatly influence invasion success as it negates resource availability as a functional constraint for introduced individuals; in addition, the impact of an invader might increase with its dietary plasticity since a greater proportion of the resident assemblage of species and multiple trophic levels are affected. The validation case will focus on two invasive crustaceans widely distributed in marine and freshwater European waters, i.e., the Atlantic blue crab Callinectes sapidus and the Louisiana crayfish Procambarus clarkii. Key questions that will be addressed are: (i) does the trophic position of C. sapidus vary between invaded Mediterranean and native west Atlantic habitats, testifying the occurrence of significant post-invasion shifts in dietary habits? (ii) does the trophic position of P. clarkii vary in invaded habitats, and which are the main ecological factors involved? (iii) do bioclimatic drivers influence broad-scale spatial patterns of variation in the trophic position of C. sapidus and P. clarkii?'. It features a diagram of a food web. Below the description, there is a table with metadata fields:

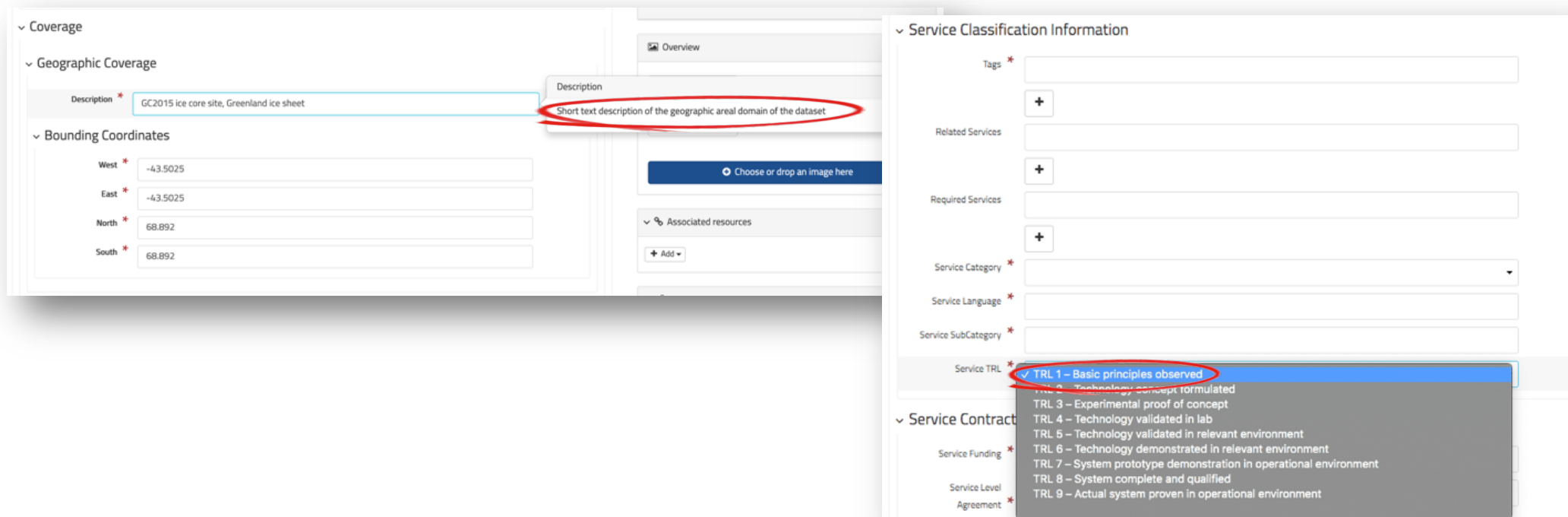
Coordination Team		Temporal extent	
• Contact Point 1		Publication date	2020-01-01
Name	Giorgio Mancinelli	Provided by	
Address	Department of Biological and Environmental Sciences and Technologies, University of Ferrara, Ferrara, Italy		

Workflow

# LifeWatch ERIC Metadata Catalogue

Users are guided in the input process by means of:

- **tooltips** for the description of the specific field
- **drop down lists** with the appropriate values of the specific field
- multiplicity for **multi-value attributes**
- **markers** for optional/mandatory metadata



The screenshot displays the LifeWatch ERIC Metadata Catalogue form, divided into two main sections: Coverage and Service Classification Information.

**Coverage Section:**

- Geographic Coverage:** Includes a Description field with the value "GC2015 ice core site, Greenland ice sheet". A tooltip is visible over this field, stating: "Short text description of the geographic areal domain of the dataset".
- Bounding Coordinates:** Includes fields for West, East, North, and South coordinates. The values are: West: -43.5025, East: -43.5025, North: 68.892, and South: 68.892.

**Service Classification Information Section:**

- Tags:** A text input field with a plus icon for adding tags.
- Related Services:** A text input field with a plus icon for adding related services.
- Required Services:** A text input field with a plus icon for adding required services.
- Service Category:** A dropdown menu.
- Service Language:** A text input field.
- Service SubCategory:** A text input field.
- Service TRL:** A dropdown menu with a list of Technology Readiness Levels (TRL) options:
  - TRL 1 – Basic principles observed
  - TRL 2 – Technology concept formulated
  - TRL 3 – Experimental proof of concept
  - TRL 4 – Technology validated in lab
  - TRL 5 – Technology validated in relevant environment
  - TRL 6 – Technology demonstrated in relevant environment
  - TRL 7 – System prototype demonstration in operational environment
  - TRL 8 – System complete and qualified
  - TRL 9 – Actual system proven in operational environment

# LifeWatch ERIC Metadata Catalogue

Users are guided in the input process by means of:

- **tooltips** for the description of the specific field
- **drop down lists** with the appropriate values of the specific field
- multiplicity for **multi-value attributes**
- **markers** for optional/mandatory metadata

Service

Revision Date

Technical Information

Contact Point

Address

Keywords

Type of Service

Type of association

EDITOR

Technical Information

Contact Point	info@marinespecies.org
Address	Flanders Marine Institute (VLIZ) - LifeWatch.be
Keywords	<ul style="list-style-type: none"> <li>Keyword 1 marine species</li> <li>Keyword 2 register</li> <li>Keyword 3 synonymy</li> </ul>
Type of service	Data analysis
Type of association	Tight

VIEW

Management Info

Maintainer

Version

Last Updated

Created

Workflow Contractual Information (Optional, but if you want to specify it, all metadata marked with \* have to be inserted)

Workflow Support Information (Optional, but if you want to specify it, all metadata marked with \* have to be inserted)

EDITOR

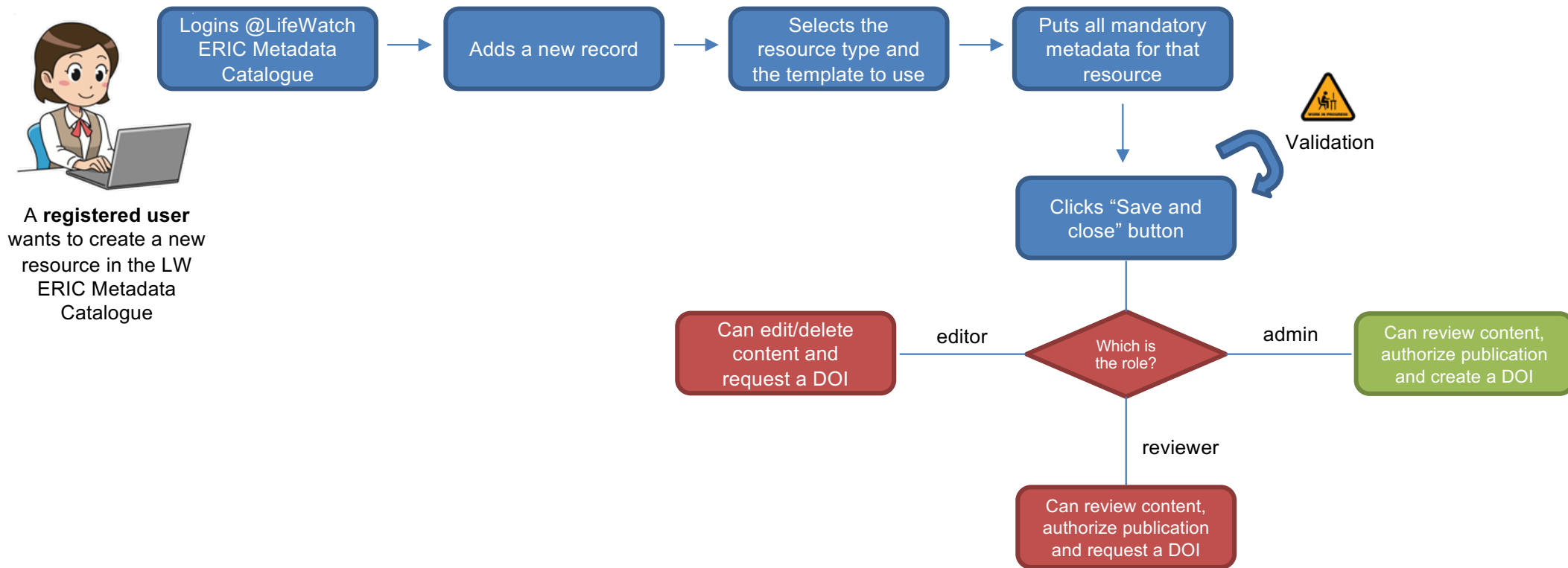
Workflow Support Information

Workflow Feedback	giorgio.mancinelli@unisaento.it
Workflow Helpdesk	giorgio.mancinelli@unisaento.it
Workflow Order	giorgio.mancinelli@unisaento.it
Workflow Training	<a href="https://writer.zoho.eu/writer/open/3x97e715a0e1a550e477d9d6ae2ad6c4f88c7">https://writer.zoho.eu/writer/open/3x97e715a0e1a550e477d9d6ae2ad6c4f88c7</a>
Workflow User Manual	<a href="https://writer.zoho.eu/writer/open/3x97e715a0e1a550e477d9d6ae2ad6c4f88c7">https://writer.zoho.eu/writer/open/3x97e715a0e1a550e477d9d6ae2ad6c4f88c7</a>

VIEW

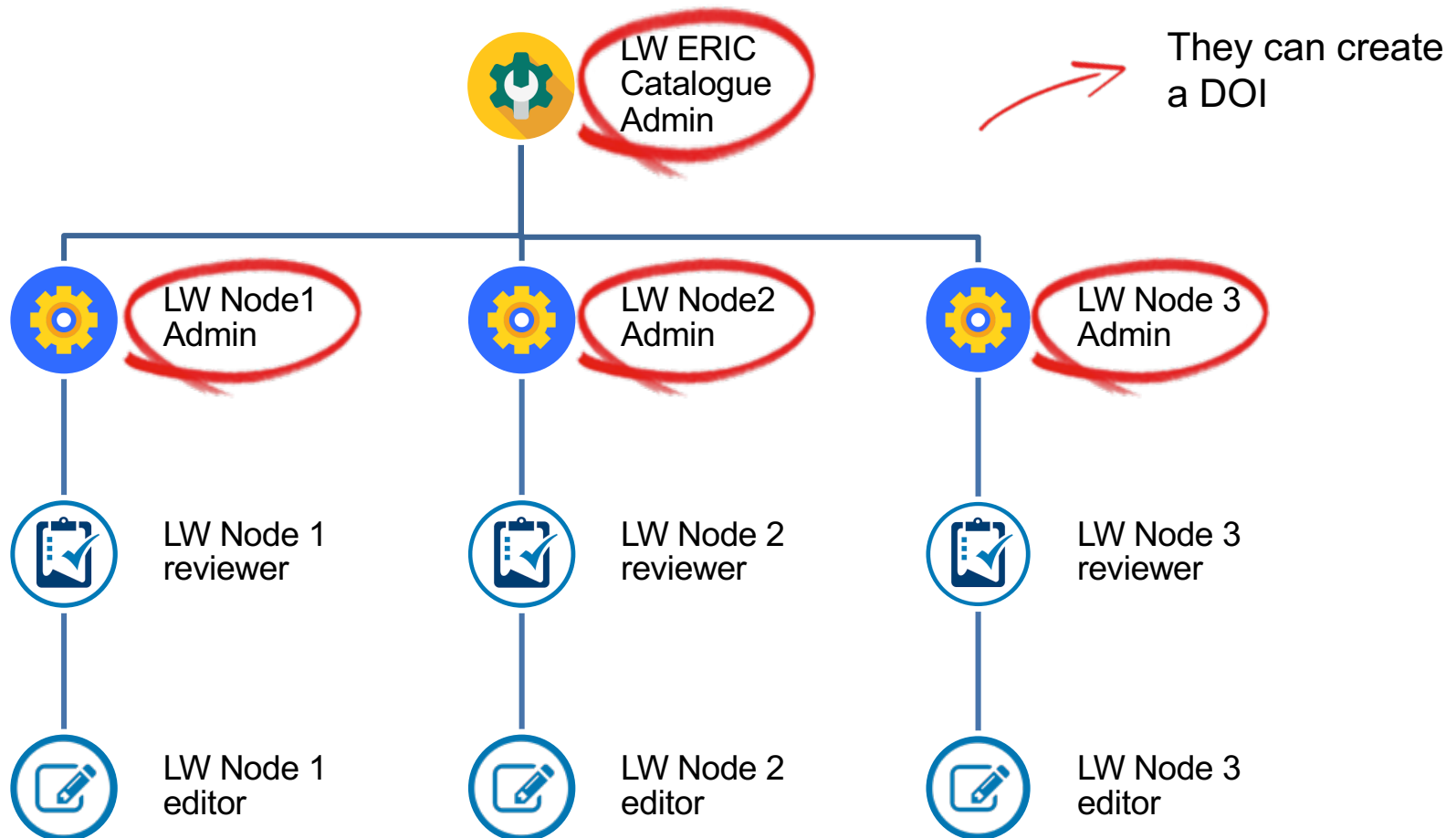
# LifeWatch ERIC Metadata Catalogue

## Add DOIs to resources with DataCite



# LifeWatch ERIC Metadata Catalogue

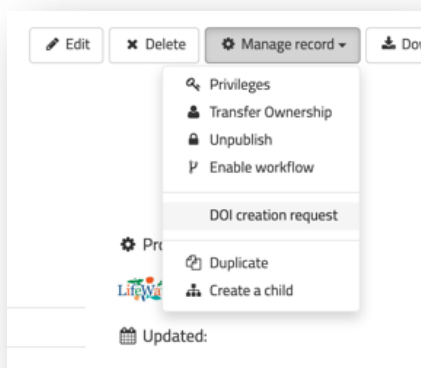
## Add DOIs to resources with DataCite



# LifeWatch ERIC Metadata Catalogue

## Add DOIs to resources with DataCite

Once that the resource is published, the user requests a DOI



Assigns the task to (him/her)self and triggers the task

mdStatusTitle-undefined

**Task owner**

Lucia Vaira

**Due date**

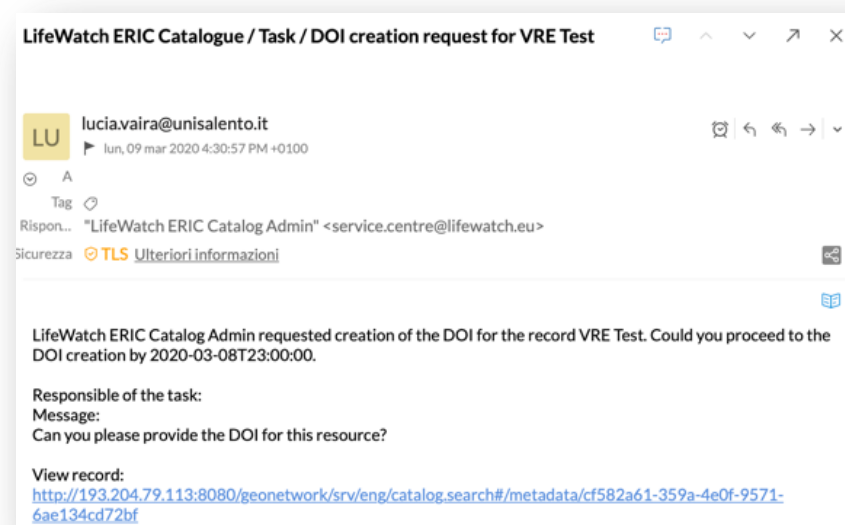
09 / 03 / 2020

**Message**

Can you please provide the DOI for this resource?

Trigger task

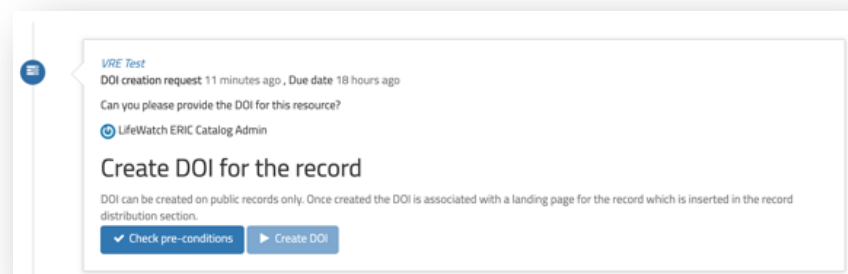
After submission of the task, the task owner is notified by email



# LifeWatch ERIC Metadata Catalogue

## Add DOIs to resources with DataCite

The task can then be resolved by checking the pre-conditions



DataCite mandatory fields:

1. Identifier (the prefix is already defined)
2. Creator (individual name and organization name)
3. Title
4. Publisher (set to "LifeWatch ERIC" which is the provider of the DOI)
5. Publication Year
6. ResourceType (one of the allowed values of the enumeration [Audiovisual, Collection, DataPaper, Dataset, Event, Image, InteractiveResource, Model, PhysicalObject, Service, Software, Sound, Text, Workflow, Other])

If DOI already exists, it needs to be removed

Create DOI for the record

DOI can be created on public records only. Once created the DOI is associated with a landing page for the record which is inserted in the record distribution section.

Record 'ceb7992c-e684-481e-b7a9-44eba16a35a7' already contains a DOI. The DOI is 'https://doi.org/10.80186/ceb7992c-e684-481e-b7a9-44eba16a35a7'. We cannot register it again. Remove the DOI reference if it does not apply to that record.

Otherwise, it is possible to create a DOI that will be added to the metadata record

DOI can be created on public record only. Once create section.

```
</gmd:CI_OnlineResource>
</gmd:online>
<gmd:online>
  <gmd:CI_OnlineResource>
    <gmd:linkage>
      <gmd:URL>https://doi.org/10.5072/da165110-88fd-11da-a88f-000d939bc5d8</gmd:URL>
    </gmd:linkage>
    <gmd:protocol>
      <gco:CharacterString>DOI</gco:CharacterString>
    </gmd:protocol>
    <gmd:name>
      <gco:CharacterString>Digital Object Identifier (DOI)</gco:CharacterString>
    </gmd:name>
  </gmd:CI_OnlineResource>
</gmd:online>
</gmd:MD_DigitalTransferOptions>
</gmd:transferOptions>
```

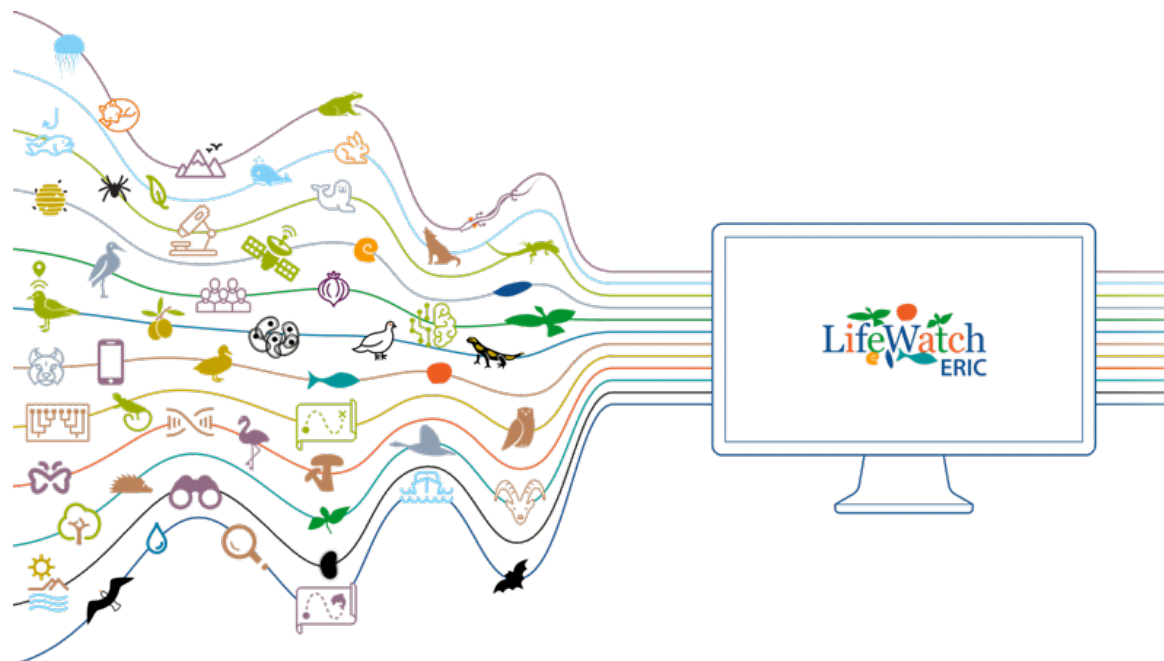




# LifeWatch ERIC Metadata Catalogue

## Next steps

- **Harvesting** features: manual import/export + machine2machine
- **Interoperability** with other catalogues (EOSC, GeoNetwork, Metacat, etc.)
- **EML 2.2 standards** for datasets (challenging task, we are defining the best approach to follow)
- **Validation** process before publication





## GeoNetwork Meeting, June 23rd 2020

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